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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,391	03/12/2004	Mattan Kamon	CVZ-018	7293

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EXAMINER	
PARIHAR, SUCHIN	
ART UNIT	**PAPER NUMBER**
2825	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/799,391	KAMON ET AL.	
	Examiner	Art Unit	
	Suchin Parihar	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/5/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13, 17-26 and 30-36* is/are rejected.

7)☒ Claim(s) *14-16 and 27-29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This FINAL office action is in response to application 10/799,391, amendment filed 10/5/2006. Claims 6, 9-10, 14-16, 20, 23-24, 27-29 and 35-36 are currently amended. Claims 1-36 are currently pending in this application.

1. Applicant's arguments filed 10/5/2006 have been fully considered but they are not persuasive. The applicable rejections from the prior office action are incorporated herein.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 4, 6, 20, 33 and 35 are rejected under 35 U.S.C. 102(b)** as being anticipated by Maseeh et al. (6,116,766).

4. With respect to claims 1, 4 and 33 Maseeh teaches a system comprising: a system-level design and simulation environment (i.e. system/tool that allows user to design and simulate, Abstract) for receiving information (i.e. GDSII data) about the components, for preparing a system-level schematic or signal flow diagram (i.e. layout generated by layout builder, Col 5, lines 12-14) of the device that connects the components (i.e. assembling physical geometric models, Col 4, lines 38-41) and for running a circuit/signal-flow/system-level simulation (i.e. simulation of MEMS device, Col 5, line 65) of the device based on the schematic or signal flow diagram; an external

location for holding process data (i.e. Fabrication database, Col 4, lines 17-25), said process data including a process specification (i.e. listing of various processes, Col 4, lines 17-18) and collection of material properties data (i.e. discussion of material properties data, Col 5, lines 25-30) for said manufacturing process, said external location being external to said system-level design and simulation environment (Databases of Figure 2 are external in relation to Fabrication simulator and/or layout builder, see Figure 2); and a process specification tool for retrieving the process data and communicating with the system level design and simulation environment to provide the process data to the system-level design and simulation environment (i.e. Fabrication Simulator receives the completed process table and process conditions [from Fabrication Database], Col 4, lines 53-60).

5. With respect to claim 6, Maseeh teaches: system-level design and simulation environment (i.e. system/tool that allows user to design and simulate, Abstract) interfaced with at least one system-level schematic (i.e. layout generated by layout builder, Col 5, lines 12-14) that includes multiple components (i.e. assembling physical geometric models, Col 4, lines 38-41) and a location holding process data external to said environment (i.e. Fabrication database, Col 4, lines 17-25), each said component including a component model, said component model being a mathematical description of component behavior (i.e. empirical model and equations describing the properties of the device, Col 4, lines 60-68), a method comprising: providing a process specification tool for retrieving the process data and communicating said process data to said system-level design and simulation environment (i.e. Fabrication Simulator receives the

completed process table and process conditions [from Fabrication Database], Col 4, lines 53-60); and integrating said process specification tool with system-level design and simulation environment to programmatically alter the components of said system-level schematic based on changes in said process data (i.e. alter device dimensions and/or process conditions, see Figure 1).

6. With respect to claims 20 and 35, Maseeh teaches a storage medium holding computer-executable instructions for a system-level design and simulation environment (i.e. system/tool that allows user to design and simulate, Abstract) interfaced with at least one system-level schematic (i.e. layout generated by layout builder, Col 5, lines 12-14) that includes multiple components (i.e. assembling physical geometric models, Col 4, lines 38-41) and a location holding process data external to said environment (i.e. Fabrication database, Col 4, lines 17-25), the instructions comprising: instructions for providing a process specification tool for retrieving the process data and communicating said process data to said system-level design and simulation environment (i.e. Fabrication Simulator receives the completed process table and process conditions [from Fabrication Database], Col 4, lines 53-60); and instructions for integrating said process specification tool with system-level design and simulation environment to programmatically alter the components of said schematic based on changes in said process data (i.e. alter device dimensions and/or process conditions, see Figure 1).

7. With respect to claims 2, 5 and 34, Maseeh teaches all the elements of claims 1, 4 and 33, from which the claims depend respectively. Maseeh teaches: wherein the

device is a MEMS device (i.e. design of MEMS or other semiconductor device, see Abstract).

8. With respect to claim 3, Maseeh teaches all the elements of claim 1, from which the claim depends. Maseeh teaches: wherein said system-level design and simulation environment is a circuit design and simulation environment (i.e. tool used to design and simulate MEMS or other semiconductor device, see Abstract).

9. With respect to claims 7 and 21, Maseeh teaches all the elements of claims 6 and 20, from which the claims depend respectively. Maseeh teaches: wherein said process data includes a process specification, said process specification listing the steps of a manufacturing process for said device to be fabricated (i.e. list of individual steps in the process of fabricating the MEMS device, Col 4, lines 10-15).

10. With respect to claims 8 and 22, Maseeh teaches all the elements of claims 6 and 20, from which the claims depend respectively. Maseeh teaches: wherein said process data includes material properties for said manufacturing process (i.e. material properties for each step in the process table, Col 5, lines 25-30).

11. With respect to claims 9, 23 and 36, Maseeh teaches all the elements of claims 6, 20 and 35, from which the claims depend respectively. Maseeh teaches: retrieving said process data with said process specification tool (i.e. process table is passed to Fabrication Simulator, Layout Builder and Material Properties simulator, Col 4, lines 50-55); providing the retrieved data to said system-level design and simulation environment (i.e. process table [retrieved data] is passed to Layout Builder [system-level design] and Fabrication Simulator [simulation environment], Col 4, lines 50-55); and using said

process data and said system-level schematic in a signal-flow simulation (i.e. simulation of the MEMS device is yielded by performing the process steps in the Process Table, Col 5, lines 65-67).

12. With respect to claims 10 and 24, Maseeh teaches all the elements of claims 9 and 23, from which the claims depend respectively. Maseeh teaches: altering said process data (i.e. alter device dimensions and/or process conditions, see Figure 1), said alteration being reflected in the components of said system-level schematic (altering device dimensions and "discretize"-ing structure will be reflected in the components of the schematic/layout) as a result of the integration of said process specification tool; and re-running said simulation using said altered data (i.e. analysis of structure is repeated through iteration as indicated in Figure 1, see [Col 5 line 65 – Col 6 line 10], simulation involves analysis of structure).

13. With respect to claims 11 and 25, Maseeh teaches all the elements of claims 10 and 24, from which the claims depend respectively. Maseeh teaches: wherein the process data being altered is a process specification (i.e. user may make changes to the sequence of process steps in the Process Table and then may simulate changes, Col 7, lines 45-55).

14. With respect to claims 12 and 26, Maseeh teaches all the elements of claims 10 and 24, from which the claims depend respectively. Maseeh teaches: wherein the process data being altered is a collection of material properties data (i.e. if material properties are not considered allowable by Expert Process Check, user can edit process data to conform accordingly, Col 5, lines 25-37).

15. With respect to claim 13, Maseeh teaches all the elements of claim 6, from which the claim depends. Maseeh teaches: wherein said system-level design and simulation environment includes a schematic editor (i.e. create and edit their own layout, Col 5, lines 1-10).

16. With respect to claims 17 and 30, Maseeh teaches all the elements of claims 6, 20, from which the claims depend respectively. Maseeh teaches: wherein said process data programmatically supplies parameters to said component models (empirical models are fabricated using process data from the process table, Col 4, lines 60-65).

17. With respect to claims 18 and 31, Maseeh teaches all the elements of claims 6 and 20, from which the claims depend respectively. Maseeh teaches: wherein said system-level design and simulation environment is used to design and simulate a MEMS device (i.e. tool used to accurately design and simulate a MEMS device, see Abstract).

18. With respect to claims 19 and 32, Maseeh teaches all the elements of claims 6 and 20, from which the claims depend respectively. Maseeh teaches: wherein said system-level design and simulation environment is used to design and simulate a micro-fabricated device (i.e. design of MEMS device and simulation of its fabrication process, see Abstract).

Allowable Subject Matter

19. Claims 14-16 and 27-29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 14 and 27, the prior art made of record fails to teach: providing with said process specification tool a user interface for a user to enable the user to specify a name of said schematic, a name of a collection of material properties data, and a name of a process specification, said names referencing a storage location holding data for the schematic, a storage location holding materials properties data and a storage location holding the process specification data respectively.

Response to Arguments

21. Applicant's arguments filed 10/5/2006 have been fully considered but they are not persuasive.

22. Applicant asserts that Maseeh fails to teach "system-level schematic" or "signal flow diagram", and also asserts that "system-level schematic" and "signal flow diagram" are separate and distinct terms in the art. Examiner disagrees with this assertion.

23. Examiner points out that the terms schematic, signal flow diagram and layout all describe types of abstract circuit drawings known in the art. Although Applicant argues alleged differences between the terms "schematic" and "layout", these differences or characteristics are not relied upon, as they are not recited in the claims. Therefore, Maseeh teaches "system-level schematic" (i.e. physical model wherein equations are solved in order to describe properties of the device, Col 4, lines 60-67; also see Applicant's arguments page 12, wherein a schematic is described involving ordinary differential equations [i.e. physical model]) and Maseeh also suggests a layout or circuit

diagram containing the interconnection between physical structures such that a electron flow analysis can be performed (performing electron flow analysis, Col 6, lines 1-7).

24. Applicant asserts that Maseeh does not teach the claimed simulation environment for receiving information about the components, for preparing a system-level schematic of the device that connects the components and for running a circuit simulation of the device based on the schematic. Examiner disagrees with this assertion.

25. Examiner points out that Fig 2 of Maseeh shows a simulation environment (fabrication simulator, see Fig 2) for receiving information about the components (databases containing information on fabrication, design and materials of the device, see Fig 2), for preparing a system-level schematic of the device that connects the components (layout builder receives database information on the design for building the layout/schematic drawing of the circuit device, see Fig 2) and for running a circuit simulation of the device based on the schematic (layout./schematic circuit drawing is used to generate a model [i.e. simulation] for the device, Col 4, lines 60-67).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suchin Parihar whose telephone number is 571-272-6210. The examiner can normally be reached on Mon-Fri, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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